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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/776,793      | 02/11/2004  | Indrajit Manna       | CS2003/023          | 4871             |

22898 7590 03/27/2007  
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| EXAMINER |
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QUINTO, KEVIN V

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| ART UNIT | PAPER NUMBER |
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2826

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE  | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS                               | 03/27/2007 | PAPER         |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/776,793

Applicant(s)

MANNA ET AL.

Examiner

Kevin Quinto

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) 1-33, 38, 40-46, 52-59, 63, 64 and 66 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 34-37, 39 and 47-51 is/are allowed.
- 6) ☒ Claim(s) 60, 62 and 65 is/are rejected.
- 7) ☒ Claim(s) 61 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6 May 2004.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 1-33, 38, 40-46, 52-59, 63, 64, and 66 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on January 4, 2007.

### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Objections***

3. Claim 62 is objected to because of the following informalities: the phrase "forming a shallow trench isolation bounded diode said shallow trench isolation bounded diode" is unintelligible. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2826

5. Claim 65 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 65 recites the limitation "a second gate" in lines 5-6. There is insufficient antecedent basis for this limitation in the claim since *a first gate* is not defined in claim 60.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 60 and 62 are rejected under 35 U.S.C. 102(b) as being anticipated by Kunz et al. (United States Patent Application Publication No. US 2002/0145164 A1).

9. In reference to claim 60, Kunz et al. (United States Patent Application Publication No. US 2002/0145164 A1, hereinafter referred to as the "Kunz" reference) discloses a method which meets the claim. Figures 6-9 with 10-12 (embodiment 1) and 6-9 with 13-16 (embodiment 2) of Kunz disclose a method for forming an ESD protection circuit formed at an input/output interface of an integrated circuit formed on a substrate to protect said integrated circuit from damage caused by an ESD event. The ESD protection circuit comprises forming a shallow trench isolation (602) bounded SCR on a surface of the substrate (601). Figures 1 and 2 (embodiments 1 and 2 respectively)

Art Unit: 2826

show that the shallow trench isolation bounded SCR is connected between a signal input/output interface of the integrated circuit (PAD) and a power supply connection of said integrated circuit (GND). A biasing circuit, a diode formed between P+ region (115, 215) and N+ region (117, unlabeled in figure 2) is formed. In reference to the claim language referring to "connecting said biasing circuit to said shallow trench isolation bounded SCR to bias said shallow trench isolation SCR to turn on more rapidly during an ESD event," the intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963).

10. With regard to claim 62, Kunz discloses forming a shallow trench isolation bounded diode, which formed of the P+ region (115, 215) and N+ region (117, unlabeled in figure 2) and connecting the diode to the signal input/output interface (PAD).

***Allowable Subject Matter***

11. Claims 34-37, 39, and 47-51 are allowed.

Art Unit: 2826

12. Claim 61 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter: the examiner is unaware of any prior art which suggests or renders obvious a method of fabrication for an electrostatic discharge protection circuit that is formed at an input/output interface of an integrated circuit formed on a substrate which comprises a polycrystalline silicon bounded SCR (silicon controlled rectifier) having a well of a first conductivity type formed within a well of a second different conductivity type with the first well containing a region of the second conductivity type and the second well containing a region of the first conductivity type having a heavily doped polysilicon layer between these two regions and astride the junction between the two wells such that the SCR is connected between a signal input/output interface and power supply connection of the integrated circuit with a biasing circuit connected to the SCR in order to bias the SCR to turn on faster during a electrostatic discharge situation as suggested in claim 34. The examiner is also unaware of any prior art which suggests or renders obvious a method of fabrication for an electrostatic discharge protection circuit that is formed at an input/output interface of an integrated circuit formed on a substrate which comprises a shallow trench isolation bounded SCR (silicon controlled rectifier) that is connected between a signal input/output interface and power supply connection of the integrated circuit with a biasing circuit connected to the SCR in order to bias the SCR to turn on faster during a electrostatic discharge situation such that a diode on the substrate is

Art Unit: 2826

connected between the signal input/output interface and the anode of the SCR in order to increase the holding voltage for the SCR when it is on as suggested in claim 61.


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quinto whose telephone number is (571) 272-1920. The examiner can normally be reached on M-F 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on (571) 272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KVQ

  
LEONARDO ANDUJAR  
PRIMARY EXAMINER